

Remarks

The undersigned's Remarks are preceded by related comments of the Examiner, presented in small bold-faced type.

2. The Draftsperson has objected to the drawings; see the copy of Form PTO-948 for an explanation.

The draftsperson's objections are noted. Applicants intend to provide corrected drawings upon receipt of an indication of allowability.

3.1 Claims 1-29 are objected to under 37 CFR § 1.75(i) because each element of each claim is not separated by a line indentation. Correction is required.

The claims have been re-formatted with the requested indentation.

4.1 Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

4.2 Regarding independent claims {1, 9, 17, 23}, claims 1, 17, and 23 contain the limitation "calculating a trace of possible placement points for attachment of the leader line to the object" and claim 9 contains a similar limitation.

The Examiner's rejection is respectfully traversed. The specification discloses that, e.g., in one embodiment, "calculating a trace of possible placement points for attachment of the leader line to the object" is calculated based on the intersection of a selected geometry and an annotation plane. (See, e.g., page 7, first full paragraph). While the specification does not specifically recite an algorithm for the computation of points of intersection between a plane and a geometry, such a recitation is not required as computing intersections are well known in the Computer Aided Design System arts. The following are just a few of the references disclosing such computation (now listed on an IDS filed herewith):

- R.B., Fredricks, D.A, Intersection of parametric surfaces and a plane, Computer Graphics and Applications, Aug. 1984, pp 48-51.
- R. E. Barnhill, S. N. Kersey, A marching method for parametric surface/surface intersection, Computer Aided Geometric Design, v.7 n.1-4, p.257-280, Jun. 1990
- Hanna, S.L., Abel, J.F., and Greenberg, D.P., Intersection of parametric surfaces by means of lookup tables, Computer Graphics and Applications, 1983, Vol. 3, No. 7.

- Houghton, E.G., Emnett, R.F., Factor, J.D., and Sabharwal, C.L., Implementation of a divide-and-conquer method for intersection of parametric surface, Computer Aided Geometric Design, 1985, Vol 2.
- Nicholas M. Patrikalakis, Surface-to-Surface Intersections, IEEE Computer Graphics and Applications, v.13 n.1, p.89-95, January 1993

In fact, the MPEP specifically advised against the applicant providing disclosure where, as here, the relevant information is well known in the art. In particular, the MPEP states:

The specification need not disclose what is well-known to those skilled in the art and preferably omits that which is well-known to those skilled and already available to the public. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987); and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984).

(MPEP 2164.05(a) (emphasis added)).

It is respectfully submitted that, in accordance with the MPEP, disclosure of a specific algorithm is not required (nor is a specific algorithm claimed for the computation of an intersection of a selected geometry and an annotation plane as there are different well-known algorithms that can be used for this aspect of an implementation). The undersigned respectfully requests that “calculating a trace of possible placement points for attachment of the leader line to the object” is sufficiently disclosed and enabled by, e.g., the specifications disclosure that such points may be calculated based on the intersection of a selected geometry and an annotation plane and it is respectfully requested that the Examiner withdraw his rejection of the claims.

Additionally, the Specification appears to lack flowcharts describing the steps necessary to perform the trace calculation. See MPEP Section 2106.02; see especially column 1 page 2100-27 (February 2003).

With regard to the disclosure of flowcharts discussed in MPEP 2106.02, what MPEP 2106.02 suggests (but does not require) is that flowcharts be provided to remove the burden “of more than routine experimentation being required to generate a working program from such a flowchart ...”. However, it is respectfully submitted that, where there exist well known algorithms for performing a calculations, such as here where the application discloses that the trace calculation may be performed by, e.g., the calculation of a plane intersecting a geometry, a flowchart is not necessary. In this case, appropriate algorithms for, e.g., the calculation of the

intersection of a plane and an object are well documented and a flow chart of such an algorithm is not necessary.

Other relevant disclosure includes, e.g., display of the selected geometry (See Fig. 4 and accompanying description at page 7, third full paragraph) and the display of trace points after selection of a leader line (See Fig. 5 and accompanying description at page 5). Also relevant is the disclosure found beginning on the last line of page 7 which states that "In this example, the trace 50 is the intersection of the tolerated geometry and the annotation plane." Here, again, the specification clearly teaches that, in one embodiment, the trace is calculated as an intersection between a plane and an object (i.e., the "geometry").

Other embodiments are also taught. For example, at page 8, the application teaches that "a trace ... is composed of the intersection of the annotation plane and the geometry (the cylinder), minus that portion of the intersection that would align the two specifications." Here, again, algorithms for such computations are well known and additional disclosure is not required.

4.4 Regarding independent claims {6, 14, 20, 27}, claims 6, 20, and 27 contain the limitations:

- (1) "determining the type of said annotation, and retrieving annotation placement rules information stored in said system pertaining to said type of annotation," and**
- (2) "determining from said retrieved information whether the plane chosen by the user for said annotation is consistent with said retrieved information."**

Claim 14 includes similar limitations.

While the Specification appears to describe the benefits of such a plane consistency calculation, the Specification does not appear to indicate how the plane consistency is calculated.

Although the Specification at pages 10-12 lists many ISO standards that appear relevant to annotation placement, listing of these standards alone does not indicate how these standards are translated into "annotation placement rules."

The undersigned respectfully submits that the Examiner's rejection is not clear. The claims do not recite the translation of standards-based placement rules into "annotation placement rules." It appears that the Examiner may be reading an additional "translation" limitation into the claims. It is well settled that the Examiner should not read limitations into a claim. See, e.g., MPEP 2173.05(p)(emphasis added):

Although a claim should be interpreted in light of the specification disclosure, it is generally considered improper to read limitations contained in the specification

into the claims. See *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969) and *In re Winkhaus*, 527 F.2d 637, 188 USPQ 129 (CCPA 1975), which discuss the premise that one cannot rely on the specification to impart limitations to the claim that are not recited in the claim.

In any case, although not requiring that standards be “translated” into “annotation placement rules”, the application does disclose that annotation placement rules can be stored by the system. See, e.g., page 6-7. The application discloses that the standards may be stored as “elements that must be selected, the type of the annotation, and the indications that are further required. For each standard-define annotation, the syntax, or spelling, imposed by the standard, i.e., the contents of the three boxes in the Fig. 1 example, and the corresponding semantics, or annotation plane.” As is well known in the programming arts, constraints and other rules may be implemented in many forms – e.g., as hard-coded program instructions, using “script” languages, as data stored in a database and processed using hard-coded program instructions, and through other programmable forms. It is respectfully submitted that one of skill in the art would know that there exist many ways to implement rules (including those derived from ISO standards) and no further disclosure is required. See further, MPEP 2164.05(a), as cited supra.

5.1 Claims 17-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

5.2 Regarding independent claims 17 and 19-20, each claim recites "A computer data signal embodied in a digital data stream comprising data representing the physical configuration of an object" with claim limitations directed to the method steps for generating the signal. Although the underlying method steps appear statutory, a computer data signal itself does not appear to fall under any of the four classes of statutory subject matter listed above in Section 101 and the computer data signal appears uncoupled with any physical structure that could make the resulting combination statutory.

The Examiner's rejection is respectfully traversed. It is well settled that a “signal” is a patentable article of manufacture. See, for example, MPEP 2106 IV.B.1(c) (MPEG Rev. 2, May 2004, page 2100-14), which states:

a signal claim directed to a practical application of electromagnetic energy is statutory regardless of its transitory nature. See *O'Reilly*, 56 U.S. at 114-19; *In re Breslow*, 616 F.2d 516, 519-21, 205 USPQ 221, 225-26 (CCPA 1980).

(MPEP 21-6 IV.B.1(c))

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Accordingly, the undersigned respectfully submits that the Examiner's rejection of claims 17-22 is contrary to the MPEP itself as claims 17-22, which are directed to a "signal" having a practical application in the CAD/CAM arts. For example, claim 17 recites the practical application of "representing a representation of an object, data representing an annotation and a leader line, and data representing a trace" while claim 19 recites the application of "representing a representation of an object, data representing an annotation and a leader line" It is respectfully requested that the Examiner withdraw this rejection.

Additionally, the computer data signal comprises "data representing the physical configuration of an object" that appears to be nonfunctional descriptive material lacking a functional relationship to the computing process. See MPEP Section 2106, subsection IV.B.1(b).

The claims have been amended to recite "data representing a representation of an object." It is respectfully submitted that "data representing a representation of an object" bears a functional relation to the computing process. In particular, the aforementioned data is functionally related to the limitation "displaying a representation of said object."

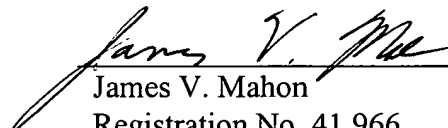
Conclusion

Claims 17 and 20 have been amended, claims 5, 13, 19 and 26 have been canceled. Claims 1-4, 6-12, 14-18, 20-25, and 27-29 are now pending and believed to be in condition for allowance. Applicant respectfully requests that all pending claims be allowed.

Please apply any credits or excess charges to our deposit account number 50-0521.

Respectfully submitted,

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